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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,238	10/29/2001	Kazuhiko Honda	P 027 7021 H7643US	8692

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EXAMINER	
PHAM, HAI CHI	

ART UNIT	PAPER NUMBER
2861	

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/053,238	HONDA ET AL.	
	Examiner	Art Unit	
	Hai C Pham	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18,23-25 and 27-29* is/are rejected.

7)☒ Claim(s) *19-22 and 26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *06/19/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. Claim 1 is objected to because of the following informalities:

- Line 22, "a image" should read –an image--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1:

- The following method step "forming a visible light characteristic changing layer in a position which can be viewed from a label surface side of an optical disk" appears to be misplaced with respect to the claimed method of "forming an image on a label surface" since that step is more appropriate for manufacturing

an optical disk such that it has a visible light characteristic changing layer in a position which can be viewed from a label surface side of the disk. The layer is made to be integral to the optical disk and it is available at the time of labeling the optical disk. Therefore such method step is not necessary.

Claims 2-4 are dependent from claim 1 above, and are therefore indefinite.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 14-18, 23-25, 27-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Iwasaki et al. (U.S. 6,329,035).

Iwasaki et al. discloses an optical disk having:

- A visible light characteristic changing layer which changes a visible characteristic of a light by exposure to a laser beam having entered from a label surface side of the optical disk (reversible thermosensitive recording layer 7, which changes transparency or color tone by heat from a laser beam),
- The visible light characteristic changing layer is a color-changing layer which undergoes coloring or change in color or hue by exposure of the laser beam (reversible thermosensitive recording layer 7, which changes transparency or color tone by heat from a laser beam),
- The color-changing layer is a heat sensitive layer (reversible thermosensitive recording layer 7, which changes color tone by heat from a laser beam) and two layers (reversible thermosensitive recording layer 7 and adhesive layer 9) fused or mixed together by exposure to the laser beam so as to change visible-light characteristic,
- The optical disk is constituted by a recording layer (3), a first reflection layer (5), the visible light characteristic changing layer (7) and a protective layer (not shown) (col. 12, lines 62-64) which are sequentially formed on a substrate (1) (Fig. 1),
- An intermediate layer (6) is disposed between the first reflection layer (5) and the visible light characteristic changing layer (7), and the first reflection layer and the intermediate layer are joined directly together, and the intermediate layer and the visible light characteristic changing layer are joined directly together,

- wherein the recording layer (optical data recording layer 3) is provided substantially intermediate position between the label surface (upper surface of the optical disk as displayed in Fig.1) and a surface (bottom surface of the optical disk) in which a laser beam for recording enters, the first reflection layer (5) is provided to the recording layer, and the visible light characteristic changing layer (7) is provided on one of a second reflection layer [and a translucence light scattering layer] separated from the first reflection layer (a second reflection layer is preferably provided on the back side of the reversible thermosensitive recording layer 7 for enhancing the contrast) (col. 12, lines 26-34),
- the optical disk comprising a first substrate (1), a recording layer (optical data recording layer 3) provided on the substrate, a first reflection layer (reflective layer 5) provided on the recording layer, a visible light characteristic changing layer (reversible thermosensitive recording layer 7) provided on the reflection layer, a visible light characteristic thereof being changed by exposure to a laser beam, and a protective layer (col. 12, lines 62-64),
- an intermediate layer (6) provided between the first reflection layer and the visible light characteristic changing layer,
- a buffer layer (intermediate layer 6) provided on the first reflection layer (5), and a second reflection layer (a second reflection layer is preferably provided on the back side of the reversible thermosensitive recording layer 7 for enhancing the contrast) (col. 12, lines 26-34) provided between the buffer layer and the visible light characteristic changing layer (7),

- a second substrate (substrate 11, Fig. 7) provided on the first reflection layer (7), and a second reflection layer provided on the second substrate (a second reflection layer is preferably provided on the back side of the reversible thermosensitive recording layer 7 for enhancing the contrast) (col. 12, lines 26-34).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-3, 5-7 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogino et al. (JP 09306144) in view of Iwasaki et al.

Ogino et al., an acknowledged prior art, discloses a method for forming an image on a surface layer of an optical disc by facing a visible light characteristic changing layer of the optical disc to the optical head (the visible light characteristic changing layer when exposed to a laser beam undergoes a phase change or a physical change such as a formation of a pit such that an image is distinguished by a difference of light reflection) (English translation, paragraphs [0003], [0016]), setting the optical disc on a turntable of an optical disk unit with the surface to be inscribed with the image facing the optical head (29) (Fig. 2), relatively moving the optical disk (via spindle motor 24) and the laser beam (via carriage 26) along the plane of the optical disk, modulating the laser beam in

synchronism with the relative movement into a specific characteristic in accordance with image data to be printed (paragraph [0012]), emitting the modulated laser beam into the visible light characteristic changing layer wherein a reflection characteristic of the visible light in the visible light characteristic changing layer is changed by exposure so that an image corresponding to the image data is printed on the surface of the optical disk (paragraph [0013]) (Fig. 1). With respect to claims 5 and 6, Ogino et al. discloses all the limitations pertinent to the apparatus for forming a visible image on the surface of the optical disk, e.g., a relative movement mechanism including a rotary drive (spindle motor 24) and a radial-direction feed drive device (linear motor 27 supporting the carriage 26 for radially moving the optical head 29 with respect to the optical disk), laser modulation circuit (laser output control section 34).

Ogino et al. fails to teach the formation of the image on the surface of the optical disk being preceded from the label side as being distinguished from the data side of the optical disk.

However, it is well known in the art that the optical disk can be provided as having a label side and a data side as evidenced by Iwasaki et al., which discloses an optical disk having a reversible thermosensitive recording layer (7) provided on one side of the optical disk for forming a visible image by exposure of a laser beam illuminating from that side to form a label and a recording side having an optical data recording layer (3) provided on the other side of the optical disk by exposure of a laser beam illuminating from that side to write data information.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide an optical disk having a visible light characteristic changing layer formed on the label side of the optical disk in the device of Ogino et al. as taught by Iwasaki et al. The motivation for doing so would have been to prevent deterioration of the recorded data information during the labeling operation of the optical disk.

Ogino et al. further teaches :

- The laser beam used for recording image having a predetermined power or higher (the laser output being controlled such that a letter symbol is printed and according to the property of each optical disk) (paragraphs [0017], [0020]),
- The optical pick up (optical head 29) is moved in a radial direction of the optical disk (via carriage 26) while the optical disk is being rotated (via spindle motor 24),
- control circuit (high order controller 37) for controlling the relative movement mechanism and the laser modulation circuit (paragraph [0014]),
- the control circuit drives the rotary drive device to a constant rotating speed for driving the radial-direction feed drive device by a predetermined amount at each predetermined rotary position (paragraphs [0013], [0016]).

9. Claims 4, 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogino et al. in view of Iwasaki et al., as applied to claims 1 and 5 above, and further in view of Bugner et al. (U.S. 6,109,324).

Ogino et al., in view of Iwasaki et al., discloses all the basic limitations of the claimed invention except for the optical disk being made stationary while the optical pickup is moved in a radial direction and in a direction orthogonal to the radial direction.

Bugner et al. discloses a method and apparatus for labeling a digital disc, the apparatus being provided with an label print head (28), which moves along the rails disposed orthogonal to each other in the X and Y directions while the optical disc (10) is hold stationary by a stop or clamp (36).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the movement mechanism for moving the label printhead along the orthogonal directions in the device of Ogino et al. as taught by Bugner et al. The motivation for doing so would have been to provide a simple linear movement mechanism for recording an image on the label surface of the optical disk.

10. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogino et al. in view of Iwasaki et al., as applied to claims 5 and 6 above, and further in view of Huber et al. (U.S. 6,654,324).

Ogino et al. as modified by Iwasaki et al., discloses all the basic limitations of the claimed invention except for the circuit for sensing the circumferential-direction and radial-direction positions of the optical pickup.

Huber et al. discloses a process of writing data onto the surface of an optical disc by moving the laser beam in the radial direction of the optical disc while the disc is rotating, wherein a rotary sensor (tach disk 32) senses the speed of the spindle (26) to

determine the relative position of the disk and the laser beam, the sensor generating a tach signal (34) to be supplied to a frequency multiplier (38) to form a data clock signal for modulating the laser beam.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the tracking system as taught by Huber et al. in the device of Ogino et al. The motivation for doing so would have been to accurately position the laser beam on the recording surface of the optical disk.

Allowable Subject Matter

11. Claims 19-22 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: the primary reason for the indication of the allowability of claim 19 is the inclusion therein, in combination as currently claimed, of the limitation "wherein a part containing the visible light characteristic changing layer and a part which does not include the visible light characteristic changing layer and is joined directly to the first reflection layer and to the protective layer are formed so as to be finely mixed between the first reflection layer and the protective layer", which is not found taught by the prior art of record considered alone or in combination.

The primary reason for the indication of the allowability of claims 21 and 26 is the inclusion therein, in combination as currently claimed, of the limitation "wherein a light

scattering layer, which is translucence and has a light scattering characteristic, is interposed between the first reflection layer and the visible light characteristic changing layer", which is not found taught by the prior art of record considered alone or in combination.

Claims 20 and 22 are allowable because they are dependent from claims 19 and 21 above.

Pertinent Prior Art

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Okumura (U.S. 5,444,687) discloses Okumura discloses a method and apparatus for accessing an optical disk provided with a focusing and tracking control circuit for focusing and tracking the circumferential-direction position and radial-direction position of the optical pickup and wherein the laser output is controlled such that the laser power is proportional to the root of the position of the laser beam in the radial direction.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HAI PHAM
PRIMARY EXAMINER

December 28, 2004